

What is claimed is:

- 1 1. A method for use in assembling a microelectronic circuit package, comprising:  
2 providing a package substrate;  
3 applying a polymer material to a surface of said package substrate;  
4 attaching pins to said package substrate, through said polymer material, by  
5 solder reflow; and  
6 allowing said polymer material to cure about solder joints associated with said  
7 pins.
- 1 2. The method of claim 1, wherein:  
2 attaching pins includes placing solder elements in the polymer material in  
3 desired pin locations.
- 1 3. The method of claim 2, wherein:  
2 said solder elements include solder balls.
- 1 4. The method of claim 2, wherein:  
2 attaching pins includes pressing a pin toward said package substrate at the  
3 location of a solder element.
- 1 5. The method of claim 2, wherein:  
2 attaching pins includes using a jig to press multiple pins toward said package  
3 substrate at the locations of solder elements.
- 1 6. The method of claim 1, wherein:  
2 applying a polymer material includes screen printing said material on said  
3 surface.

1 7. The method of claim 1, wherein:  
2 attaching pins to said package substrate includes placing said pins in a jig and  
3 applying pressure to said jig at a temperature that equals or exceeds a melting  
4 temperature of the pin solder so that the pins are pressed through the polymer material.

1     8.     The method of claim 1, wherein:  
2     said polymer material includes a no flow material.

1     9.     The method of claim 1, wherein:  
2     said polymer material has fluxing capabilities.

1 10. A method for use during fabrication of a microelectronic device package,  
2 comprising:  
3 providing a package substrate having a plurality of contact pads on a surface  
4 thereof;  
5 attaching pins to said plurality of contact pads by solder reflow; and  
6 applying an encapsulation material about solder joints associated with said pins,  
7 said encapsulation material to maintain a location of said pins on said package substrate  
8 during subsequent high temperature processing.

1 11. The method of claim 10, wherein attaching pins includes:  
2 placing said pins in a jig;  
3 applying solder to at least one of the following: said pins and said contact pads;  
4 aligning said jig with said package substrate; and  
5 applying pressure to said jig at a temperature that equals or exceeds a melting  
6 temperature of said solder.

1    12.    The method of claim 10, wherein:  
2           applying an encapsulation material includes applying a no flow material.

- 1 13. The method of claim 10, wherein:  
2 said encapsulation material includes at least one of the following: an epoxy-  
3 based material and a polyimide-based material.
- 1 14. A substrate for use in a microelectronic circuit package, comprising:  
2 a plurality of pin contact pads on a first surface of said substrate;  
3 a plurality of pins soldered to pin contact pads on said first surface of said  
4 substrate; and  
5 an encapsulation material surrounding solder joints associated with said  
6 plurality of pins, said encapsulation material preventing movement of pins when said  
7 substrate is subjected to high temperatures.
- 1 15. The substrate of claim 14, wherein:  
2 said encapsulation material includes a polymer material.
- 1 16. The substrate of claim 14, wherein:  
2 said encapsulation material includes a no flow material.
- 1 17. The substrate of claim 14, wherein:  
2 said encapsulation material includes at least one of the following: an epoxy-  
3 based material and a polyimide-based material.
- 1 18. A microelectronic device comprising:  
2 a package substrate having pin contact pads on a first surface thereof;  
3 a plurality of pins soldered to said pin contact pads on said first surface of said  
4 package substrate;  
5 an encapsulation material surrounding solder joints associated with said  
6 plurality of pins, said encapsulation material preventing movement of pins when said  
7 microelectronic device is subjected to high temperatures; and

8 a microelectronic die connected to said package substrate, said microelectronic  
9 die having bond pads that are conductively coupled to said pins through said package  
10 substrate.

1 19. The microelectronic device of claim 18 wherein:  
2 said microelectronic die is connected to said package substrate using a lead free  
3 solder having a relatively high melting temperature.

1 20. The microelectronic device of claim 18 wherein:  
2 said encapsulation material includes a polymer material.

1 21. The microelectronic device of claim 18 wherein:  
2 said encapsulation material includes a no flow material.

1 22. The microelectronic device of claim 18 wherein:  
2 said encapsulation material includes at least one of the following: an epoxy-  
3 based material and a polyimide-based material.